



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

BOOK REVIEWS

Le emozioni e la vita del subcosciente. By G. C. FERRARI. Rivista di psicologia, viii., 1912. 93-118.

In this article Ferrari advances a hypothesis which he refrains from calling a theory because of the uncertainties in the histological and physiological researches on the sympathetic nervous system. The hypothesis, briefly stated, is that the sympathetic or, more broadly, the autonomic nervous system, furnishes the physiological basis for the emotional and unconscious life, as distinguished from the cerebro-spinal system, which is the organ of conscious life. He calls attention to the fact that the introspective researches on thought processes by Marbe, Messer, Binet, Külpe and Bovet have had a beneficial effect in emphasizing the dynamic aspect of thought as opposed to the static discussions, from which we derive our diagrammatic representations, which tend to persist in psychological thinking.

In supporting this hypothesis Ferrari takes James' theory of the emotion as a point of departure. In James' theory that a perception or memory arouses diverse organic reactions as perceived by consciousness, vascular, glandular, muscular, etc., the emotion itself originates from a fact of consciousness, that is, from the cognition which the brain takes of the peripheral modifications. Binet in his last work reaffirmed this emphasis as to the peripheral character of the emotional phenomena, but he added a distinction between the emotion and the consciousness of it. Between an act of intellect and an act of emotion Binet finds a difference only of degree, which is marked by a difference in organic reactions, and for him "an emotion is a mental attitude of an indeterminate nature, in general important and violent." The perception of the organic sensations which accompany the attitude gives the consciousness of the emotion. The emotion exists as soon as the attitude arises, but becomes conscious only when the attitude is perceived. Ferrari notes James' distinction between the grosser or more primitive emotions, such as fear, anger, etc., and the subtler emotions, such as the intellectual, aesthetic, etc., which have not special significance for the conservation of life, and it is the first group which is constantly accompanied by the peripheral modifications which we call emotional expressions, which are traces of movements which in the phyletic series once had a protective value which no longer exists for us. James regards this as showing their vital importance, but Ferrari thinks another interpretation possible, namely that these mimetic expressions still have an effective value and are a direct sign of a correlation which we do not need to interpret.

If this be admitted, then a further inference is logically admissible. We know that these vital emotions are controlled by the same nervous system which controls vegetative life. Now if these manifestations of emotion persist in us, not because of any essential, eventual importance, but because their presence is an epiphenomenon, a fact consensual to the activity of the organs, it is simply necessary to admit that if those organs which exercise a protective function so important to the individual and to the species are innervated by a special nervous system,

and this system has no other functions, to it must be referred those protective functions of which the expression of the emotions is the external index. The physical modifications which constitute the phenomenology of the emotions are dependent upon innervation by fibres of the great sympathetic system, which controls the organic or vegetative life.

In following out the physiological basis of his hypothesis, Ferrari uses chiefly the work of J. N. Langley. Langley divided the autonomic nervous system into three parts, the cranio-cervical, the thoracic-lumbar, and the sacral. The thoracic-lumbar division together with the cords, rami, and thoracic and abdominal ganglia, form the sympathetic nervous system properly so-called, to which must be added the plexuses of Auerbach and Meissner as forming the enteric nervous system. The sympathetic system is thus only a part of the great autonomic system. The German authorities who base their division chiefly upon the fact that all the organs of vegetative life possess a double innervation give the name of sympathetic system only to that part of the ganglia chain of the sympathetic which is connected with the spinal medulla from the first thoracic to the fourth lumbar nerve, while the autonomic nervous system would consist, I, of the cranio-bulbar nervous fibres derived from the basal ganglia and the medulla oblongata, together with the ocular motor, facial, glosso-pharyngeal and vagus nerves, and, II, of the sacral nervous fibres which arise from the inferior lumbar and sacral medulla comprised in the pelvic nerve. In the whole body, the sympathetic system innervates the unstriated muscles of the organs of the blood vessels and the glandular organs. The sweat glands, however, muscles of the skin and head, and a part of the vascular muscles of the intestine, have an exclusively spinal innervation. Some of the autonomic structures have a double nervous supply which may be sympathetic and cranial, or sympathetic and sacral, while other autonomic structures have a single nervous supply, namely from the sympathetic system. Whenever the innervation is a double one, the action of the two systems, the autonomic and the sympathetic, is antagonistic. But there is no constant contrast between the function of the sympathetic fibres on the one hand and the cranial and sacral on the other. In the double supply the fibres from each source may have the same action or they may have a different action, and in the latter case either may be motor or either may be inhibitory. When, however, the fibres of one set arise from several nerves, there is no difference in function in the fibres from the several nerves, which according to Langley gives support to the theory that the cranial and sacral autonomic centers are distinct and developed at a different time and under different conditions.

In support of this theory many biological facts may be quoted. Bethe in experimenting on the most elementary nervous system, that of the *Medusa*, found that the organs of motility consisted in a circular ring on the margin of the umbrella, which is simply a gelatinous mass of undifferentiated protoplasm, and the tentacles. In these organs are contained very fine neuro-fibrils. Bethe found that if one of the tentacles be touched lightly with a glass rod there is a slight contraction, limited to a portion of the tentacle. If the touch is stronger the whole tentacle contracts, and with increasing force of the stimulus the contraction extends to the whole motor organism, thus showing that this simple nervous structure performs uniformly the two functions of motility and the vegetative life.

Moreover, in observations on the life of insects, and as we ascend the zoölogical scale, we find a dualism and somewhat later an opposi-

tion between the two nervous systems. Fabre observed the *cercer major*, a kind of wasp, prepares for the food of the larvae, which are born after the death of the parent, a large beetle which it paralyzes by its sting. Though the beetle is incapable of movement Fabre found death was only apparent, as no decomposition took place under conditions which would have favored it, and he found the reason for this in the arrangement of the nervous system into ganglia and supposed that there was greater tenacity of life in those ganglia which control the vegetative functions. Ferrari, however, thinks it more logical to suppose that the poison injected by the sting was of a selective nature, which affected only the motor fibres. Thus even as low down in the scale of life as the insects there exists a dualism of the nervous system. An additional proof of this dualism is furnished by the observations of Hirschfeld on embryos and acephalic monsters. In the human embryo the heart begins to beat before there is any general organization of the nervous system, and acephalic monsters have a well-developed sympathetic system. Now under the reactions of the sympathetic or autonomic nervous system are included all the movements expressive of emotion while the brain, and consequently our consciousness would only be informed of the existence of the emotions by secondary paths when the global impression of the stimulus and its reaction arrives at the cortex. Observations on the perception of infants and the education of the feeble-minded have shown two successive grades in perception, that is, the simple impression and a preliminary synthesis of associated sensations which takes place before it arrives at the brain.

This hypothesis affords an explanation of the persistence of the mimetic traces in human beings of the emotional reactions of animals and primitive ancestors, for if these are not connected with some process which is continually taking place, their permanence is difficult to explain. If their value was merely that of witnesses to a past stage of evolution, these mimetic traces would occur only aberrantly, casually, like the so-called degenerative signs, instead of being constant and typical.

The instinctive and unreasonable attractions and repulsions which occur in animals under certain circumstances, for example, the tremor of the limbs, perspiration, etc., in horses who have to travel a path which has been crossed by wild animals, also indicates some deep-seated nervous reaction, which is most easily explained as the direct influence of the emotional stimuli upon the sympathetic nervous system. If we take into consideration the importance which these reactions have had in the evolution of different species of animals and man, it is evident that they could never have been safely entrusted to so complex an organ as the brain, which, by the very nature of its function of adapting the organism to new conditions, must have been in an unstable condition in order to render evolution progressive. Moreover, while it may be admitted that many of the internal functions may have originally been presided over by the brain and then relegated to the lower centers, it is not possible to imagine that a function of such importance as the conservation of life was at first performed by the sympathetic system, as is shown by the lower forms of life and acephalic monsters, was then assumed by the brain at some period of which we have no evolutionary traces, and then again became a function of the sympathetic system, whereas we know that this has always provided for the external manifestations of the emotional life. It therefore seems more

logical to conclude that the sympathetic system not only has the function of furnishing modes of emotional reaction but that it has always served completely as the anatomical substrate of the emotional life.

Another argument based on the emotional reactions is that every one of these reactions, the vaso-motor, glandular, visceral, etc., is based upon the muscular contractions, possibly even on contractions of unstriated muscle. This fact, besides establishing an analogy which is almost an identity, between the simple reflexes of peripheral origin of the autonomic system of Langley and those of our sense organs (for instance, the contraction of the ciliary or rectus muscles of the eye) also furnishes an explanation of the great value and importance of those traces of muscular contractions which the Germans call *Bewusstseinslagen*, now generally called attitudes by French and American psychologists. To the fact that these reactions are a muscular function their preservation has been due. It is being progressively demonstrated that the psychic elements which can find a path in the muscles for the efflux of their energy are those which have the greatest chance of survival and of making their efficacy felt in the consciousness of the individual and upon the fate of the species. A counter-proof also lies in the fact that emotional reflexes become attenuated in man in correlation with the progressive development of the cerebral cortex in which are found the centers of inhibition. That the fundamental facts of emotional life have undergone no essential changes in the course of evolution is too evident to require proofs. But without going back in the animal series for examples, it suffices to note that the same emotions exist in modern man as existed in the Homeric heroes. It is true that we no longer shriek aloud, nor rend our garments and tear our hair at the death of a dear friend, nor do we slaughter the household animals in his honor, because the intellectual sense of the ridiculous admonishes us and restrains these expressions, but the will and the tendencies exist and we feel their power even though the particular expressions are inhibited by the cerebral centers.

A proof of the duality of the two facts, emotions and consciousness of emotions, is found in those cases in which mental disease has caused paralysis of the superior synthesis of consciousness. In support of this Ferrari quotes the case described by D'Allonnes, in which a woman with melancholia, who was anaesthetic over a large portion of her body, showed all the external signs of emotion but declared that she felt none. Binet criticized D'Allonnes' interpretation of this case, claiming that a case completely anaesthetic to all emotion as one observed by Simon would have been apathetic, and maintained that in the D'Allonnes case there was a diminution of emotional consciousness so pronounced in contrast with the conservation of the gestures and words that it merely serves for an argument to insist upon the opposition between emotions and the consciousness of emotions. Ferrari thinks that his hypothesis offers further explanation of this case in that if the sympathetic system is the organ of the emotions and the cerebro-spinal system is the organ for the recognition of emotion, then all the reactions observed by D'Allonnes could take place and the emotion would be present but the patient would fail to recognize it in consequence of the lesions of the cerebro-spinal system, which existed in the case. Other cases of mental disease like progressive paralysis also offer an indirect confirmation of the hypothesis. In these cases there is a degeneration of the blood vessels, especially in the brain, which diminishes or suppresses mobility. The patients are optimistic. Could

not, asks Ferrari, this optimism be due to the rigidity of certain peripheral vascular reflexes, to the constant immobility of the conditions of their cerebral blood supply? In paranoiacs we also have illusions of greatness, but we find a difference in the manifestations of these three classes of cases, melancholiacs, progressive paralytics, and the paranoiacs. In the progressive paralytics there is no conflict between the illusions of greatness and willingness to perform even menial work, but in paranoiacs, although they will perform menial work they must always find some mental justification for it, that is, they must cultivate humbleness, set a good example, etc. Thus in the melancholiacs and paralytics there exists a species of discordance between the nervous systems of the intellectual and emotion life. In paranoiacs, on the contrary, the double personality results from dissociations in consciousness itself determined by the delirium or what provokes the delirium.

Ferrari finds further support for his hypothesis in the facts of gregariousness, both among animals and human beings, and again interest, which is a spring of attention and the controller of association and memory, he considers as the truest expression of those tendencies which do not succeed in sufficiently individualizing themselves to become conscious but determining our emotional disposition, modify and regulate our conduct and give it a form which our intelligence must then justify. It is this intimate and active connection between emotions, obscure, because not yet interpreted to the brain, its principal natural substrate in the nervous system, and the spirit and form of our subconscious activity, which leads Ferrari to maintain that the unconscious activity itself finds its natural foundation in the sympathetic system, which seems peculiarly fitted to be the basis of the unconscious life. It also furnishes an explanation of habit more satisfactory than those usually propounded.

Modern psychotherapy especially in its form of psychoanalysis lays great stress on those residues of impressions which the organism has received and imaged in an epoch in which they could not enter and make a part of the consciousness of the individual because the consciousness of its cerebral centers was still immature, and this also accords well with the hypothesis. Ferrari thinks that while this hypothesis will find its principal confirmation and application in clinical studies upon maladies of the sympathetic, psychology is also able to contribute to its verification.

THEODATE L. SMITH.

Friedrich Nietzsche and his New Gospel. By EMILY S. HAMBLÉN.
Boston, R. G. Badger, 1911. 195 p.

This book aims to give an outline of Nietzsche's constructive thought, and to show that this thought is founded on demonstrable biological principles. It finds the essence of Nietzscheism to lie in that absolute monism which applies the law of the conscious process to all the phenomena of life. To admit the truth of this method is to recognize psychology as the "Queen of the Sciences." By this new psychology, the past and its values must be transvalued. History, philosophy and religion, are looked at from this point of view. Nietzsche's social philosophy and his psychology of woman are shown to be inspired by it. The complete symbolic expression of his thought as given in *Thus spake Zarathustra* is touched upon in the last three chapters, entitled respectively, *Zarathustra*, *Beyond-Man*, and *Eternal Recurrence*.

R. R. GURLEY.